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# NEW ELEMENTS AND EPHEMERIS OF COMET *e*, 1896, (GIACOBINI).

#### By F. H. SEARES.

From the Lick Obervatory observations of September 5th, 11th, and 28th, Mr. Crawford and I have deduced improved elements of Comet Giacobini. The elements are considerably different from our first set, and show how very nearly indeterminate a first solution would necessarily be.

Our results are:

T = Oct. 18.91806 G. M. T.  

$$i = 12^{\circ} 20' 0''.0$$
  
 $\Omega = 186 15 44.0$   
 $\omega = 136 10 6.1$ 
Mean equinox of 1896.0.  
 $\log q = 0.208244$ 

Residuals for the middle place (O - C):

$$\Delta\lambda\cos\beta = -5^{\prime\prime}.9$$
;  $\Delta\beta = -20^{\prime\prime}.6$ .

[The ephemeris, at four-day intervals, from October 14th to the 26th, is here omitted.]

Students' Observatory, Berkeley, Cal., October 9, 1896.

#### ELLIPTIC ELEMENTS OF COMET GIACOBINI.

By W. J. Hussey and C. D. Perrine.

From Mt. Hamilton observations of September 5th, 11th, and 28th, we have computed the following elliptic elements of this comet:

Epoch: 1896, Sept. 5.5, Gr. M. T.

$$M = 354^{\circ} \ 43' \ 37''$$
 $\Omega = 191 \ 44 \ 13$ 
 $\omega = 139 \ 5 \ 28$ 
 $i = 11 \ 35 \ 18$ 
Mean ecliptic and equinox of 1896.0.

 $\log e = 9.82189$ 
 $\log a = 0.64636$ 
 $\log \mu = 2.58047$ 
Period = 9.323 years.

The same observations are also satisfied by the following remarkable system of elements:

Epoch: 1896, Sept. o.o, Gr. M. T.  $M = 286^{\circ} 26' 48''$  S = 216 34 53  $\omega = 190 49 45$  i = 7 34 29  $\log e = 9.29718$   $\log a = 0.09470$   $\log \mu = 3.40796$ Period = 506 days.

The last elements, however, do not satisfy later observations.

MT. HAMILTON, CAL., October 13, 1896.

## PLANETARY PHENOMENA FOR JANUARY AND FEBRUARY, 1897.

By Professor Malcolm McNeill.

JANUARY, 1897.

Mercury is in good position for observation until after the middle of the month. It reaches its greatest eastern elongation on January 6th, and for the first two weeks of the month it remains above the horizon from an hour and a half to an hour after sunset. It then approaches the Sun very rapidly and passes inferior conjunction on January 22d.

Venus is very conspicuous in the evening sky in the southwest, three to four hours behind the Sun in its daily path. It moves northeastward among the stars, about thirty-five degrees, from the eastern part of the constellation Capricorn through Aquarius into Pisces.

Mars is still a fine object, and is above the horizon nearly the whole night. It is in the constellation Taurus, nine degrees north and a little east of the first magnitude star Aldebaran (a Tauri). Its apparent motion among the stars is very small, less than two degrees. It retrogrades (moves westward) until January 15th, and then moves eastward again, its position at the end of the month being about the same as at the beginning. Its